

SEQUENCE LISTING

<110> WALLACH, David
SCHUCHMANN, Marcus
GONCHAROV, Tanya

<120> Caspase-8 Interacting Proteins

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Pro Arg Ala Cys Pro Leu Cys Ser Gln Gly Thr Lys Thr Leu Ser Gly
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Ser Ile Ala Pro Met Asn Val Cys Val Arg Ala Leu Pro Ala Gly His

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75

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Arg Phe Ser Met Lys Ser Ala Leu Lys Ala Ala Ser Leu His Pro Ala
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Gln Leu Leu Gly Leu Glu Lys Ser Lys Gly Thr Leu Thr Leu Val Leu
100 105 110

Thr Gln Thr Ser Trp Cys Ser Thr Thr Pro Phe Thr Ser Arg Pro Pro
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Lys Asp Leu Gly
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Arg Ile Leu Arg Gly Gly Lys Leu	Leu Arg Glu Asp Leu Trp Val Arg		
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Gly Gly Arg Ile Leu Asp Pro Glu Lys Leu	Phe Phe Glu Glu Arg Arg		
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Val Ala Asp Glu Arg Arg Asp Cys Gly	Gly Arg Ile Leu Ala Pro Gly		
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Phe Ile Asp Val Gln Ile Asn Arg Gly	Phe Gly Val Asp Phe Ser Gln		
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Ala Thr Glu Asp Val Gly Ser Gly Val	Ala Leu Val Ala Arg Arg Ile		
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Leu Ser His Gly Val Thr Ser Phe Cys	Pro Thr Leu Val Thr Ser Pro		
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Pro Glu Ala Tyr His Lys Val Val Pro Gln	Ile Pro Val Lys Ser Gly		
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Gly Pro His Gly Ala Gly Val Leu Gly	Leu His Leu Glu Gly Pro Phe		
165	170		175
Ile Ser Arg Glu Lys Arg Gly Ala His	Pro Glu Ala His Leu Arg Ser		
180	185		190
Phe Glu Ala Asp Ala Phe Gln Asp Leu	Leu Ala Thr Tyr Gly Pro Leu		
195	200	205	
Asp Asn Val Arg Ile Val Thr Leu	Ala Pro Glu Leu Gly Arg Ser His		
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Glu Val Ile Arg Ala Leu Thr Ala Arg Gly	Ile Cys Val Ser Leu Gly		
225	230	235	240
His Ser Val Ala Asp Leu Arg Ala Ala	Glu Asp Ala Val Trp Ser Gly		
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Ala Thr Phe Ile Thr His Leu Phe Asn	Ala Met Leu Pro Phe His His		
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275	280	285	
Gly Arg Cys Ile Phe Tyr Gly Met Ile	Ala Asp Gly Thr His Thr Asn		
290	295	300	
Pro Ala Ala Leu Arg Ile Ala His Arg	Ala His Pro Gln Gly Leu Val		
305	310	315	320

Leu Val Thr Asp Ala Ile Pro Ala Leu Gly Leu Gly Asn Gly Arg His
 325 330 335
 Thr Leu Gly Gln Gln Glu Val Glu Val Asp Gly Leu Thr Ala Tyr Val
 340 345 350
 Ala Gly Glu Arg Pro Asp Pro Leu Gly Pro Arg Ser Gln Pro Ala Cys
 355 360 365
 Gln Val Ala His Asp Pro Pro Arg Ala Cys Pro Leu Cys Ser Gln Gly
 370 375 380
 Thr Lys Thr Leu Ser Gly Ser Ile Ala Pro Met Asn Val Cys Val Arg
 385 390 395 400
 His Phe Leu Gln Ala Thr Gly Cys Ser Met Glu Ser Ala Leu Glu Ala
 405 410 415
 Ala Ser Leu His Pro Ala Gln Leu Leu Gly Leu Glu Lys Ser Lys Gly
 420 425 430
 Thr Leu Asp Phe Gly Ala Asp Ala Asp Phe Val Val Leu Asp Asp Ser
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35 40 45

Arg Glu Leu Gly His Gly Gln Pro Glu Ala Arg Gly Pro Ala Pro Leu
50 55 60

Gln Gln His Pro Gln Val Leu Leu Trp Glu Gln Gln Arg Leu Ala Gly
65 70 75 80

Arg Leu Pro Arg Gly Ser Thr Gly Asp Thr Val Leu Leu Pro Leu Ala
85 90 95

Gln Gly Gly His Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro Ala Ala
100 105 110

Pro Ala Ser Leu Ser Ala Pro Glu Pro Ala Ser Gln Ala Arg Val Leu
115 120 125

Ser Ser Ser Glu Thr Pro Ala Arg Thr Leu Pro Phe Thr Thr Gly Leu
130 135 140

Ile Tyr Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn
145 150 155 160

Ser Arg His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg
165 170 175

Leu Gln Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg
180 185 190

Lys Ala Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val
195 200 205

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210 215 220

Lys Leu Ala Gly Leu Leu Ala Gln Arg Met Phe Val Met Leu Pro Cys

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Ser Asn Ala Ala Arg Trp Ala Ala Gly Ser Val Thr Asp Leu Ala Phe
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Lys Val Ala Ser Arg Glu Leu Lys Asn Gly Phe Ala Val Val Arg Pro
275 280 285
Pro Gly His His Ala Asp His Ser Thr Ala Met Gly Phe Cys Phe Phe
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Asn Ser Val Ala Ile Ala Cys Arg Gln Leu Gln Gln Gln Ser Lys Ala
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Ser Lys Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Gly Thr
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Gln Gln Thr Phe Tyr Gln Asp Pro Ser Val Leu Tyr Ile Ser Leu His
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Val Gly Ala Gly Ser Gly Glu Gly Phe Asn Val Asn Val Ala Trp Ala
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Gly Gly Tyr His Val Ser Ala Lys Cys Phe Gly Tyr Met Thr Gln Gln
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Leu Met Asn Leu Ala Gly Ala Val Val Leu Ala Leu Glu Gly Gly
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His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ala Ala
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Lys Pro Asn Leu Asn Ser Ile Arg Ser Leu Glu Ala Val Ile Arg Val
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His Ser Lys Tyr Trp Gly Cys Met Gln Arg Leu Ala Ser Cys Pro Asp
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 35 40 45

Glu Gly Asp Pro Gly Met Leu Lys Pro Cys Gly Cys Val Pro Ser Pro
 50 55 60

Gln Lys Val Ala Leu Lys Val Gly Ala Pro Phe Cys Thr Cys Gly Cys
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Phe Gln Arg Phe His Leu Pro Lys Ala Cys Pro Gly Gln Gln Gly Ser
 85 90 95

Pro Glu Ser Ala Arg Pro Arg Asn Arg Gln Pro Tyr Ala Thr Gln Asn
 100 105 110

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 115 120 125

Cys His Gly Tyr Ile Cys Phe Leu Phe Asp Ser Ser Gln Thr Ala Glu
 130 135 140

Val Glu Val Gly Trp Gly Gly Asp Thr Gly Ser Gln Leu Arg Pro Leu
 145 150 155 160

Leu Arg Gly Ala Val Tyr Asn Ser Arg Met Trp Asp Ser Gln Lys Glu
 165 170 175

Asp Ser Lys Pro Asp Ile Leu Arg Leu Gln Asn Thr Gln Leu Phe His
 180 185 190

Ser Val Ser Leu Ser Thr Asp Gly Thr Gln Val Ser Pro Gly Ala His
 195 200 205

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Pro Val Glu Pro Pro Pro Glu Pro Thr Leu Leu Ala Leu Gln Arg Pro
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Gln Arg Leu His His His Leu Phe Leu Ala Gly Leu Gln Gln Gln Arg
260 265 270
Ser Val Glu Pro Met Arg Val Lys Met Glu Leu Pro Ala Cys Gly Ala
275 280 285
Thr Leu Ser Leu Val Pro Ser Leu Pro Ala Phe Ser Ile Pro Arg His
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Gln Ser Gln Ser Ser Thr Pro Cys Pro Phe Leu Gly Cys Arg Pro Cys
305 310 315 320
Pro Gln Leu Ser Met Asp Thr Pro Met Pro Glu Leu Gln Val Gly Pro
325 330 335
Gln Glu Gln Glu Leu Arg Gln Leu Leu His Lys Asp Lys Ser Lys Arg
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355 360 365
Pro Ala Ala Ala Cys Val Ala Cys Ala Val Ala Ser Ser Val Val Lys
370 375 380
Gln Lys Leu Ala Glu Val Ile Leu Lys Lys Gln Gln Ala Ala Leu Glu
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Pro Trp His Ser Phe Cys Arg Thr Leu Glu Pro Leu Glu Thr Glu Gly
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465 470 475 480
Pro Asn Leu Lys Leu Arg Tyr Lys Pro Lys Lys Ser Leu Glu Arg Arg
485 490 495
Lys Asn Pro Leu Leu Arg Lys Glu Ser Ala Pro Pro Ser Leu Arg Arg
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530 535 540

Pro Ile Leu Gly Ser Glu Ala Leu Leu Gly Gln Arg Leu Arg Leu Gln
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Glu Thr Ser Val Ala Pro Phe Ala Leu Pro Thr Val Ser Leu Leu Pro
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Ala Ile Thr Leu Gly Leu Pro Ala Pro Ala Arg Ala Asp Ser Asp Arg
580 585 590

Arg Thr His Pro Thr Leu Gly Pro Arg Gly Pro Ile Leu Gly Ser Pro
595 600 605

His Thr Pro Leu Phe Leu Pro His Gly Leu Glu Pro Glu Ala Gly Gly
610 615 620

Thr Leu Pro Ser Arg Leu Gln Pro Ile Leu Leu Leu Asp Pro Ser Gly
625 630 635 640

Ser His Ala Pro Leu Leu Thr Val Pro Gly Leu Gly Pro Leu Pro Phe
645 650 655

His Phe Ala Gln Ser Leu Met Thr Thr Glu Arg Leu Ser Gly Ser Gly
660 665 670

Leu His Trp Pro Leu Ser Arg Thr Arg Ser Glu Pro Leu Pro Pro Ser
675 680 685

Ala Thr Ala Pro Pro Pro Pro Gly Pro Met Gln Pro Arg Leu Glu Gln
690 695 700

Leu Lys Thr His Val Gln Val Ile Lys Arg Ser Ala Lys Pro Ser Glu
705 710 715 720

Lys Pro Arg Leu Arg Gln Ile Pro Ser Ala Glu Asp Leu Glu Thr Asp
725 730 735

Gly Gly Gly Pro Gly Gln Val Val Asp Asp Gly Leu Glu His Arg Glu
740 745 750

Leu Gly His Gly Gln Pro Glu Ala Arg Gly Pro Ala Pro Leu Gln Gln
755 760 765

His Pro Gln Val Leu Leu Trp Glu Gln Gln Arg Leu Ala Gly Arg Leu
770 775 780

Pro Arg Gly Ser Thr Gly Asp Thr Val Leu Leu Pro Leu Ala Gln Gly
785 790 795 800

Gly His Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro Ala Ala Pro Ala
805 810 815

Ser Leu Ser Ala Pro Glu Pro Ala Ser Gln Ala Arg Val Leu Ser Ser
820 825 830

Ser Glu Thr Pro Ala Arg Thr Leu Pro Phe Thr Thr Gly Leu Ile Tyr

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840

845

Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn Ser Arg
850 855 860

His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu Gln
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Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg Lys Ala
885 890 895

Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu Leu
900 905 910

Tyr Gly Thr Asn Pro Leu Ser Arg Leu Lys Leu Asp Asn Gly Lys Leu
915 920 925

Ala Gly Leu Leu Ala Gln Arg Met Phe Val Met Leu Pro Cys Gly Gly
930 935 940

Val Gly Pro Leu Ala Thr Leu Ser Ala Phe Leu Ala Ser Leu Ala Pro
945 950 955 960

Thr Val Pro Gln Gly Leu Ser Arg Val Ser Trp Gly Leu Lys Pro Pro
965 970 975

Pro Gly Pro Asn Pro Lys Ser Arg Pro Ala Pro Cys Pro Trp Gly Pro
980 985 990

Gly Arg Gly Val Gly Thr Thr Pro Leu Gly Pro Gly Ser Cys Val Lys
995 1000 1005

Pro Trp Met Met Arg Ala Leu Thr Leu Ala Pro Gln Val Asp Thr Asp
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Thr Ile Trp Asn Glu Leu His Ser Ser Asn Ala Ala Arg Trp Ala Ala
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Gly Ser Val Thr Asp Leu Ala Phe Lys Val Ala Ser Arg Glu Leu Lys
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Asn Gly Phe Ala Val Val Arg Pro Pro Gly His His Ala Asp His Ser
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Thr Ala Met Gly Phe Cys Phe Phe Asn Ser Val Ala Ile Ala Cys Arg
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Gln Leu Gln Gln Ser Lys Ala Ser Lys Ile Leu Ile Val Asp Trp
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Asp Val His His Gly Asn Gly Thr Gln Gln Thr Phe Tyr Gln Asp Pro
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Ser Val Leu Tyr Ile Ser Leu His Arg His Asp Asp Gly Asn Phe Phe
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Pro Gly Ser Gly Ala Val Asp Glu Val Gly Ala Gly Ser Gly Glu Gly
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Phe Asn Val Asn Val Ala Trp Ala Gly Gly Leu Asp Pro Pro Met Gly
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Asp Pro Glu Tyr Leu Ala Ala Phe Arg Ile Val Val Met Pro Ile Ala
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Arg Glu Phe Ser Pro Asp Leu Val Leu Val Ser Ala Gly Phe Asp Ala
1185 1190 1195 1200

Ala Glu Gly His Pro Ala Pro Leu Gly Gly Tyr His Val Ser Ala Lys
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Cys Phe Gly Tyr Met Thr Gln Gln Leu Met Asn Leu Ala Gly Gly Ala
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Val Val Leu Ala Leu Glu Gly Gly His Asp Leu Thr Ala Ile Cys Asp
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Ala Ser Glu Ala Cys Val Ala Ala Leu Leu Gly Asn Arg Val Asp Pro
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Leu Ser Glu Glu Gly Trp Lys Gln Lys Pro Asn Leu Asn Ala Ile Arg
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Ser Leu Glu Ala Val Ile Arg Val His Ser Lys Cys Gly Asp Gly Thr
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Leu Ala Glu Leu Arg Leu Lys Asp Leu Gly Gly Thr Leu Pro His Arg
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Gly Gln Ile Leu Gly Phe Arg Cys Gln Pro Gly Asp Leu Leu Leu Val
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Trp Ser Lys Ile Pro Val Ser Asp Pro Gly Ser Asn Gly Glu His Pro
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Pro Val Arg Gly Tyr Pro Leu Ser Pro Pro Asp Gly Ala Ser Arg Ala
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Tyr Gln Thr Val Ala Pro Gln Gly Lys Tyr Trp Gly Cys Met Gln Arg
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Leu Ala Ser Cys Pro Asp Ser Trp Val Pro Arg Val Pro Gly Ala Asp
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Lys Glu Glu Val Glu Ala Val Thr Ala Leu Ala Ser Leu Ser Val Gly
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Pro Met Asn Leu
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Glu Pro Met Arg Val Lys Met Glu Leu Pro Ala Cys Gly Ala Thr Leu
 50 55 60

Ser Leu Val Pro Ser Leu Pro Ala Phe Ser Ile Pro Arg His Gln Ser
 65 70 75 80

Gln Ser Ser Thr Pro Cys Pro Phe Leu Gly Cys Arg Pro Cys Pro Gln
 85 90 95

Leu Ser Met Asp Thr Pro Met Pro Glu Leu Gln Val Gly Pro Gln Glu
 100 105 110

Gln Glu Leu Arg Gln Leu Leu His Lys Asp Lys Ser Lys Arg Ser Lys
 115 120 125

Glu Val Ala Thr Pro Ala Gln Pro Ser Pro Thr Ser Gln Val Pro Ala
 130 135 140

Ala Ala Cys Val Ala Cys Ala Val Ala Ser Ser Val Val Lys Gln Lys
 145 150 155 160

Leu Ala Glu Val Ile Leu Lys Lys Gln Gln Ala Ala Leu Glu Arg Thr
 165 170 175

Val His Pro Asn Ser Pro Gly Ile Pro Tyr Arg Ser Gln Gly Pro Cys
 180 185 190

Ser Gly Gln Cys Pro Cys Ser Val Pro Thr Pro Leu Lys Gln Pro Trp
 195 200 205

His Ser Phe Cys Arg Thr Leu Glu Pro Leu Glu Thr Glu Gly Ala Thr
 210 215 220

Arg Ser Met Leu Ser Ser Phe Leu Pro Pro Val Pro Ser Leu Pro Ser
 225 230 235 240

Asp Pro Pro Glu His Phe Pro Leu Arg Lys Thr Val Ser Glu Pro Asn
 245 250 255

Leu Lys Leu Arg Tyr Lys Pro Lys Lys Ser Leu Glu Arg Arg Lys Asn
 260 265 270

Pro Leu Leu Arg Lys Glu Ser Ala Pro Pro Ser Leu Arg Arg Arg Pro

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280

285

Ala Glu Thr Leu Gly Asp Ser Ser Pro Ser Ser Ser Ser Thr Pro Ala
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Ser Gly Cys Ser Ser Pro Asn Asp Ser Glu His Gly Pro Asn Pro Ile
 305 310 315 320

Leu Gly Ser Glu Ala Leu Leu Gly Gln Arg Leu Arg Leu Gln Glu Thr
 325 330 335

Ser Val Ala Pro Phe Ala Leu Pro Thr Val Ser Leu Leu Pro Ala Ile
 340 345 350

Thr Leu Gly Leu Pro Ala Pro Ala Arg Ala Asp Ser Asp Arg Arg Thr
 355 360 365

His Pro Thr Leu Gly Pro Arg Gly Pro Ile Leu Gly Ser Pro His Thr
 370 375 380

Pro Leu Phe Leu Pro His Gly Leu Glu Pro Glu Ala Gly Gly Thr Leu
 385 390 395 400

Pro Ser Arg Leu Gln Pro Ile Leu Leu Leu Asp Pro Ser Gly Ser His
 405 410 415

Ala Pro Leu Leu Thr Val Pro Gly Leu Gly Pro Leu Pro Phe His Phe
 420 425 430

Ala Gln Ser Leu Met Thr Thr Glu Arg Leu Ser Gly Ser Gly Leu His
 435 440 445

Trp Pro Leu Ser Arg Thr Arg Ser Glu Pro Leu Pro Pro Ser Ala Thr
 450 455 460

Ala Pro Pro Pro Pro Gly Pro Met Gln Pro Arg Leu Glu Gln Leu Lys
 465 470 475 480

Thr His Val Gln Val Ile Lys Arg Ser Ala Lys Pro Ser Glu Lys Pro
 485 490 495

Arg Leu Arg Gln Ile Pro Ser Ala Glu Asp Leu Glu Thr Asp Gly Gly
 500 505 510

Gly Pro Gly Gln Val Val Asp Asp Gly Leu Glu His Arg Glu Leu Gly
 515 520 525

His Gly Gln Pro Glu Ala Arg Gly Pro Ala Pro Leu Gln Gln His Pro
 530 535 540

Gln Val Leu Leu Trp Glu Gln Gln Arg Leu Ala Gly Arg Leu Pro Arg
 545 550 555 560

Gly Ser Thr Gly Asp Thr Val Leu Leu Pro Leu Ala Gln Gly Gly His
 565 570 575

Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro Ala Ala Pro Ala Ser Leu
 580 585 590

Ser Ala Pro Glu Pro Ala Ser Gln Ala Arg Val Leu Ser Ser Ser Glu
595 600 605

Thr Pro Ala Arg Thr Leu Pro Phe Thr Thr Gly Leu Ile Tyr Asp Ser
610 615 620

Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn Ser Arg His Pro
625 630 635 640

Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu Gln Glu Arg
645 650 655

Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg Lys Ala Ser Leu
660 665 670

Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu Leu Tyr Gly
675 680 685

Thr Asn Pro Leu Ser Arg Leu Lys Leu Asp Asn Gly Lys Leu Ala Gly
690 695 700

Leu Leu Ala Gln Arg Met Phe Val Met Leu Pro Cys Gly Gly Val Gly
705 710 715 720

Pro Leu Ala Thr Leu Ser Ala Phe Leu Ala Ser Leu Ala Pro Thr Val
725 730 735

Pro Gln Gly Leu Ser Arg Val Ser Trp Gly Leu Lys Pro Pro Pro Gly
740 745 750

Pro Asn Pro Lys Ser Arg Pro Ala Pro Cys Pro Trp Gly Pro Gly Arg
755 760 765

Gly Val Gly Thr Thr Pro Leu Gly Pro Gly Ser Cys Val Lys Pro Trp
770 775 780

Met Met Arg Ala Leu Thr Leu Ala Pro Gln Val Asp Thr Asp Thr Ile
785 790 795 800

Trp Asn Glu Leu His Ser Ser Asn Ala Ala Arg Trp Ala Ala Gly Ser
805 810 815

Val Thr Asp Leu Ala Phe Lys Val Ala Ser Arg Glu Leu Lys Asn Gly
820 825 830

Phe Ala Val Val Arg Pro Pro Gly His His Ala Asp His Ser Thr Ala
835 840 845

Met Gly Phe Cys Phe Phe Asn Ser Val Ala Ile Ala Cys Arg Gln Leu
850 855 860

Gln Gln Gln Ser Lys Ala Ser Lys Ile Leu Ile Val Asp Trp Asp Val
865 870 875 880

His His Gly Asn Gly Thr Gln Gln Thr Phe Tyr Gln Asp Pro Ser Val
885 890 895

Leu Tyr Ile Ser Leu His Arg His Asp Asp Gly Asn Phe Phe Pro Gly
900 905 910

Ser Gly Ala Val Asp Glu Val Gly Ala Gly Ser Gly Glu Gly Phe Asn
915 920 925

Val Asn Val Ala Trp Ala Gly Gly Leu Asp Pro Pro Met Gly Asp Pro
930 935 940

Glu Tyr Leu Ala Ala Phe Arg Ile Val Val Met Pro Ile Ala Arg Glu
945 950 955 960

Phe Ser Pro Asp Leu Val Leu Val Ser Ala Gly Phe Asp Ala Ala Glu
965 970 975

Gly His Pro Ala Pro Leu Gly Gly Tyr His Val Ser Ala Lys Cys Phe
980 985 990

Gly Tyr Met Thr Gln Gln Leu Met Asn Leu Ala Gly Gly Ala Val Val
995 1000 1005

Leu Ala Leu Glu Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser
1010 1015 1020

Glu Ala Cys Val Ala Ala Leu Leu Gly Asn Arg Val Asp Pro Leu Ser
1025 1030 1035 1040

Glu Glu Gly Trp Lys Gln Lys Pro Asn Leu Asn Ala Ile Arg Ser Leu
1045 1050 1055

Glu Ala Val Ile Arg Val His Ser Lys Cys Gly Asp Gly Thr Leu Ala
1060 1065 1070

Glu Leu Arg Leu Lys Asp Leu Gly Gly Thr Leu Pro His Arg Gly Gln
1075 1080 1085

Ile Leu Gly Phe Arg Cys Gln Pro Gly Asp Leu Leu Leu Val Trp Ser
1090 1095 1100

Lys Ile Pro Val Ser Asp Pro Gly Ser Asn Gly Glu His Pro Pro Val
1105 1110 1115 1120

Arg Gly Tyr Pro Leu Ser Pro Pro Asp Gly Ala Ser Arg Ala Tyr Gln
1125 1130 1135

Thr Val Ala Pro Gln Gly Lys Tyr Trp Gly Cys Met Gln Arg Leu Ala
1140 1145 1150

Ser Cys Pro Asp Ser Trp Val Pro Arg Val Pro Gly Ala Asp Lys Glu
1155 1160 1165

Glu Val Glu Ala Val Thr Ala Leu Ala Ser Leu Ser Val Gly Ile Leu
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Ala Glu Asp Arg Pro Ser Glu Gln Leu Val Glu Glu Glu Pro Met
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Leu Ala Leu Lys Gln Lys Gln Gln Ile Gln Arg Gln Ile Leu Ile Ala
 35 40 45

Glu Phe Gln Arg Gln His Glu Gln Leu Ser Arg Gln His Glu Ala Gln
 50 55 60

Leu His Glu His Ile Lys Gln Gln Glu Met Leu Ala Met Lys His
 65 70 75 80

Gln Gln Glu Leu Leu Glu His Gln Arg Lys Leu Glu Arg His Arg Gln
 85 90 95

Glu Gln Glu Leu Glu Lys Gln His Arg Glu Gln Lys Leu Gln Gln Leu
 100 105 110

Lys Asn Lys Glu Lys Gly Lys Glu Ser Ala Val Ala Ser Thr Glu Val
 115 120 125

Lys Met Lys Leu Gln Glu Phe Val Leu Asn Lys Lys Lys Ala Leu Ala
 130 135 140

His Arg Asn Leu Asn His Cys Ile Ser Ser Asp Pro Arg Tyr Trp Tyr
 145 150 155 160

Gly Lys Thr Gln His Ser Ser Leu Asp Gln Ser Ser Pro Pro Gln Ser
 165 170 175

Gly Val Ser Thr Ser Tyr Asn His Pro Val Leu Gly Met Tyr Asp Ala
 180 185 190

Lys Asp Asp Phe Pro Leu Arg Lys Thr Ala Ser Glu Pro Asn Leu Lys
 195 200 205

Leu Arg Ser Arg Leu Lys Gln Lys Val Ala Glu Arg Arg Ser Ser Pro
 210 215 220

Leu Leu Arg Arg Lys Asp Gly Pro Val Val Thr Ala Leu Lys Lys Arg
 225 230 235 240

Pro Leu Asp Val Thr Asp Ser Ala Cys Ser Ser Ala Pro Gly Ser Gly
 245 250 255

Pro Ser Ser Pro Asn Asn Ser Ser Gly Ser Val Ser Ala Glu Asn Gly
 260 265 270

Ile Ala Pro Ala Val Pro Ser Ile Pro Ala Glu Thr Ser Leu Ala His

275

280

285

Arg Leu Val Ala Arg Glu Gly Ser Ala Ala Pro Leu Pro Leu Tyr Thr
 290 295 300

 Ser Pro Ser Leu Pro Asn Ile Thr Leu Gly Leu Pro Ala Thr Gly Pro
 305 310 315 320

 Ser Ala Gly Thr Ala Gly Gln Gln Asp Thr Glu Arg Leu Thr Leu Pro
 325 330 335

 Ala Leu Gln Gln Arg Leu Ser Leu Phe Pro Gly Thr His Leu Thr Pro
 340 345 350

 Tyr Leu Ser Thr Ser Pro Leu Glu Arg Asp Gly Gly Ala Ala His Ser
 355 360 365

 Pro Leu Leu Gln His Met Val Leu Leu Glu Gln Pro Pro Ala Gln Ala
 370 375 380

 Pro Leu Val Thr Gly Leu Gly Ala Leu Pro Leu His Ala Gln Ser Leu
 385 390 395 400

 Val Gly Ala Asp Arg Val Ser Pro Ser Ile His Lys Leu Arg Gln His
 405 410 415

 Arg Pro Leu Gly Arg Thr Gln Ser Ala Pro Leu Pro Gln Asn Ala Gln
 420 425 430

 Ala Leu Gln His Leu Val Ile Gln Gln His Gln Gln Phe Leu Glu
 435 440 445

 Lys His Lys Gln Gln Phe Gln Gln Gln Leu Gln Met Asn Lys Ile
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 Ile Pro Lys Pro Ser Glu Pro Ala Arg Gln Pro Glu Ser His Pro Glu
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 Glu Thr Glu Glu Glu Leu Arg Glu His Gln Ala Leu Leu Asp Glu Pro
 485 490 495

 Tyr Leu Asp Arg Leu Pro Gly Gln Lys Glu Ala His Ala Gln Ala Gly
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 Val Gln Val Lys Gln Gln Glu Pro Ile Glu Ser Asp Glu Glu Ala Glu
 515 520 525

 Pro Pro Arg Glu Val Glu Pro Gly Gln Arg Gln Pro Ser Glu Gln Glu
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 Leu Leu Phe Arg Gln Gln Ala Leu Leu Leu Glu Gln Gln Arg Ile His
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 Gln Leu Arg Asn Tyr Gln Ala Ser Met Glu Ala Ala Gly Ile Pro Val
 565 570 575

 Ser Phe Gly Gly His Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro Ala
 580 585 590

Ser Ala Thr Phe Pro Val Ser Val Gln Glu Pro Pro Thr Lys Pro Arg
595 600 605

Phe Thr Thr Gly Leu Val Tyr Asp Thr Leu Met Leu Lys His Gln Cys
610 615 620

Thr Cys Gly Ser Ser Ser His Pro Glu His Ala Gly Arg Ile Gln
625 630 635 640

Ser Ile Trp Ser Arg Leu Gln Glu Thr Gly Leu Arg Gly Lys Cys Glu
645 650 655

Cys Ile Arg Gly Arg Lys Ala Thr Leu Glu Leu Gln Thr Val His
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Ser Glu Ala His Thr Leu Leu Tyr Gly Thr Asn Pro Leu Asn Arg Gln
675 680 685

Lys Leu Asp Ser Lys Lys Leu Leu Gly Ser Leu Ala Ser Val Phe Val
690 695 700

Arg Leu Pro Cys Gly Gly Val Gly Val Asp Ser Asp Thr Ile Trp Asn
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Glu Val His Ser Ala Gly Ala Ala Arg Leu Ala Val Gly Cys Val Val
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Glu Leu Val Phe Lys Val Ala Thr Gly Glu Leu Lys Asn Gly Phe Ala
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Val Val Arg Pro Pro Gly His His Ala Glu Glu Ser Thr Pro Met Gly
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Phe Cys Tyr Phe Asn Ser Val Ala Val Ala Ala Lys Leu Leu Gln Gln
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Arg Leu Ser Val Ser Lys Ile Leu Ile Val Asp Trp Asp Val His His
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Gly Asn Gly Thr Gln Gln Ala Phe Tyr Ser Asp Pro Ser Val Leu Tyr
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Met Ser Leu His Arg Tyr Asp Asp Gly Asn Phe Phe Pro Gly Ser Gly
820 825 830

Ala Pro Asp Glu Val Gly Thr Gly Pro Gly Val Gly Phe Asn Val Asn
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Met Ala Phe Thr Gly Gly Leu Asp Pro Pro Met Gly Asp Ala Glu Tyr
850 855 860

Leu Ala Ala Phe Arg Thr Val Val Met Pro Ile Ala Ser Glu Phe Ala
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Pro Asp Val Val Leu Val Ser Ser Gly Phe Asp Ala Val Glu Gly His
885 890 895

Pro Thr Pro Leu Gly Gly Tyr Asn Leu Ser Ala Arg Cys Phe Gly Tyr
900 905 910

Leu Thr Lys Gln Leu Met Gly Leu Ala Gly Gly Arg Ile Val Leu Ala
915 920 925

Leu Glu Gly Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala
930 935 940

Cys Val Ser Ala Leu Leu Gly Asn Glu Leu Asp Pro Leu Pro Glu Lys
945 950 955 960

Val Leu Gln Gln Arg Pro Asn Ala Asn Ala Val Arg Ser Met Glu Lys
965 970 975

Val Met Glu Ile His Ser Lys Tyr Trp Arg Cys Leu Gln Arg Thr Thr
980 985 990

Ser Thr Ala Gly Arg Ser Leu Ile Glu Ala Gln Thr Cys Glu Asn Glu
995 1000 1005

Glu Ala Glu Thr Val Thr Ala Met Ala Ser Leu Ser Val Gly Val Lys
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Pro Ala Glu Lys Arg Pro Asp Glu Glu Pro Met Glu Glu Glu Pro Pro
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Leu

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